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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
09/760,339	01/12/2001	Oscar A. Chappel	92717-297	2213	
7590 10/28/2004 Raymond Van Dyke			EXAMINER JARRETT, SCOTT L		
1445 Ross Avenue Dallas, TX 75202-2799			3623 DATE MAILED: 10/28/2004		

Please find below and/or attached an Office communication concerning this application or proceeding.

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		Applicat	ion No.	Applicant(s)	1		
Office Action Summary		09/760,3	339	CHAPPEL ET AL.			
		Examine	er	Art Unit			
		Scott L.		3623			
Period fo	 The MAILING DATE of this communicate Reply 	cation appears on th	e cover sheet with	the correspondence address) 		
THE - Exte after - If the - If NC - Failu Any	ORTENED STATUTORY PERIOD FO MAILING DATE OF THIS COMMUNIO nsions of time may be available under the provisions of SIX (6) MONTHS from the mailing date of this commu- period for reply specified above is less than thirty (30 period for reply is specified above, the maximum state to reply within the set or extended period for reply verify received by the Office later than three months af ed patent term adjustment. See 37 CFR 1.704(b).	CATION. of 37 CFR 1.136(a). In no e unication.) days, a reply within the sta tutory period will apply and v will, by statute, cause the ap	vent, however, may a reply atutory minimum of thirty (3 will expire SIX (6) MONTHS plication to become ABANI	be timely filed 0) days will be considered timely. 5 from the mailing date of this communication by the constant of the communication	cation.		
Status							
1)	Responsive to communication(s) filed	d on					
	•	b) This action is	non-final.				
′=	Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.						
Disposit	ion of Claims						
5)□ 6)⊠ 7)□	Claim(s) 1-28 is/are pending in the all 4a) Of the above claim(s) is/are Claim(s) is/are allowed. Claim(s) 1-28 is/are rejected. Claim(s) is/are objected to. Claim(s) are subject to restrict	e withdrawn from co					
Applicat	ion Papers						
10)	The specification is objected to by the The drawing(s) filed on is/are: Applicant may not request that any object Replacement drawing sheet(s) including The oath or declaration is objected to	a) accepted or bettion to the drawing(s) the correction is requ	be held in abeyance ired if the drawing(s)	. See 37 CFR 1.85(a). is objected to. See 37 CFR 1.1			
Priority (under 35 U.S.C. § 119						
12) <u>□</u> a)	Acknowledgment is made of a claim f All b) Some * c) None of: 1. Certified copies of the priority of 2. Certified copies of the priority of 3. Copies of the certified copies of application from the Internation See the attached detailed Office action	documents have be documents have be of the priority docum nal Bureau (PCT Ru	en received. en received in App nents have been re ule 17.2(a)).	lication No ceived in this National Stag	e		
2) Notice 3) Information	nt(s) ce of References Cited (PTO-892) ce of Draftsperson's Patent Drawing Review (P mation Disclosure Statement(s) (PTO-1449 or er No(s)/Mail Date		Paper No(s)/N	nmary (PTO-413) //ail Date rmal Patent Application (PTO-152)			

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DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 112

- The following is a quotation of the second paragraph of 35 U.S.C. 112:
 The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- 3. Claims 1, 9, 14, 17, 20 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite and failing to point out and distinctly claim the subject matter which the applicant regards as the invention.

Regarding Claims 1, 20 and 28 the disclosure does not clearly define the phrase "stability of a project." The phrase stability of a project is used in a plurality of ways and interchangeably with the following terms status of a project, stability of a project's organization and content, and the progress of a project rendering the phrase inconsistent, vague and indifferent. Further the phrase stability of a project could

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include a plurality of concepts including but not limited to financial, resource, process, tools, platforms, client, customer or any of a number of other project related stability factors. The examiner read stability of a project to mean the progress of a project as disclosed in the title of the invention.

Regarding Claim 9 the disclosure does not clearly define the phrase "development." The phrase development as claimed can read to include a plurality of concepts including but not limited to the organization/resources responsible for developing a project, the act, process, or result of developing (code, documents, tests, analysis, etc...), the status/progress of a project, or the state of being developed thereby making the term "development" as claimed vague and indefinite. The examiner read development to mean the progress of a project.

Regarding Claim 14 the disclosure does not clearly define the phrase "variable dependency." The phrase variable dependency as claimed can read to include a plurality of concepts including but not limited to a dependent relations between variables (metrics), metrics whose dependencies' change/vary over time, between projects, project progress results which vary over time or on dependent on other progress parameter analysis results or an almost unlimited number of variable dependencies thereby making the term "variable dependency" as claimed vague and indefinite. The examiner read variable dependency to mean any of the items discussed above.

Regarding Claim 17 the disclosure does not clearly define the phrase "object oriented format." The phrase object oriented format as claimed can read to include a plurality of concepts including but not limited to an object-oriented architecture, object-oriented data store, object-oriented analysis and design, object-oriented programming languages, object-oriented modeling languages or an almost unlimited number of "formats" thereby making the term "object oriented format" as claimed vague and indefinite. The examiner read object oriented format to mean any of the items discussed above.

Claim Rejections - 35 USC § 101

4. Claims 1-19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of:

- (1) whether the invention is within the technological arts; and
- (2) whether the invention produces a useful, concrete, and tangible result.

For a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a process claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts.

Regarding Claims 1-19, claims 1-19 only recite an abstract idea. The recited method for determining the stability of a project does not apply, involve, or use the technological arts since all of the recited steps can be performed in the mind of the user or by use of a pencil and paper.

Additionally, for a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result. The claimed invention, as a whole, is not within the technological art as explained above claims 1-19 are deemed to be directed to non-statutory subject matter.

Claim Rejections - 35 USC § 103

- 5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 6. Claims 1-4, 6-9, 12-15 and 18-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul et al., Software Metrics Knowledge and Databases for Project Management (January 1999) in view of Minkiewicz et al., U.S. Patent 6,073,107.

Regarding Claims 1, 20 and 28 Paul et al. teaches method and system for analyzing and assessing the progress of a project (employing software metrics in the

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efficient execution and management of projects), the method and system further comprising:

the selection and use of a plurality of metrics (parameters), including but not limited to project progress metrics, and their associated data (Section 2 - Test & Evaluation Metrics Data, Columns 3-4).

the use of data integration and analytical techniques, including multiple regression analysis, on a plurality of metrics in order to conduct quality and risk assessments (project status, Section 2.1.2 Regression and Principal Component Analysis, Page 260; Figure 3).

a plurality of techniques, including regression analysis and principal component analysis, to identify the correlation among a plurality of metrics thereby determining their interdependencies (Section 2.1.2, Page 260).

Paul et al. does not expressly state the use or computation of correlation coefficients.

Official notice is taken that it is old and well known in the art that regression analysis is a common and well known technique for determining the relationship between several independent or predictor variables and a dependent or criterion variable and that the degree to which two or more predictors are related to the dependent variable is expressed in the correlation coefficient. The regressions analysis, further comprising the use of correlation coefficients, providing knowledge of

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the interdependencies can be crucial in predicting the extent perturbations brought about by any failures or changes in the project (Section 2.1.2, Page 260).

It would have been obvious to one skilled in the art at the time of the invention that the method and system for analyzing and assessing the progress of a project wherein analyzing the metrics was conducted through the use of statistical regression analysis techniques, as taught by Paul et al., would have included the calculation of correlation coefficients. The benefit of such regression analysis being to further assist project managers with the critical management decisions regarding risk and quality during the life cycle of a software project (Section 3 – Conclusion, Page 263).

Regarding Claims 2 and 21 Paul et al. teaches the use of a plurality of project progress and product metrics for use in analyzing and assessing the progress of a project. Further Paul et al. teaches the use of classification trees (Section 2.1.4, Page 261-262) for the classifying of a plurality of metrics (Column 1, Paragraph 2, Page 262).

Paul et al. does not teach the use of the specific project progress parameters as claimed.

Minkiewicz et al. teaches a method and system for analyzing and assessing the progress of a project (Abstract). Minkiewicz et al. further teaches the representation of software project components whose structure is represented as a tree. More

specifically Minkiewicz et al. teaches the use of a plurality of metrics (measures) associated with the tree including, but not limited to: the average number of children per nodes (leaves) and the number of top level nodes (branches) as a means for analyzing and assessing the size and complexity of the software project in order to predict/measure the progress of a project (Figure 13; Column 2, Lines 9-16; Column 7, Lines 24-44; Column 8, Lines 7-12).

It would have been obvious to one skilled in the art at the time of the invention that the method and system for analyzing and assessing the progress of a project as taught by Paul et al. would benefit from the inclusion of the project progress metrics for determining the size and complexity of a software project as taught by Minkiewicz et al. thereby adding depth and accuracy to the analysis in the form of providing additional project progress metrics. The resultant analysis and assessment providing a more accurate and complete understanding of the progress of a project therefore assisting project managers with the critical management decisions regarding risk and quality during the life cycle of a project (Section 3 – Conclusion, Page 263).

Regarding Claims 3 and 22 Paul et al. does not expressly teach the regression equations to be used when analyzing the collected metrics data.

Official notice is taken that the regression equations as claimed are old and well known in the art as being among a plurality of equations and approaches available for

statistical regression analysis. Accordingly, it would have been obvious to one skilled in the art at the time of the invention that the method and system for analyzing and assessing the progress of a project as taught by Paul et al. would benefit from the use of any of the plurality of well known and accepted regression analysis techniques and equations, including the equations as claimed, when analyzing the metric data collected in order to provide insight into the progress of a project.

Regarding Claims 4 and 23 Paul et al. teaches the use of a database for the collection, storage and analysis of software project progress parameters (metrics; Paragraph 1, Page 256).

While Paul et al. does not expressly teach the structure of the collected metric data as being branches and leaves (tree) his extensive use of graphs (classification trees, influence diagrams/graphs and entity-relationship diagrams) – a tree being by definition a connected acyclic graph, teaches the use of graphs for structuring data thereby resulting in models which are straightforward to build and interpret (Paragraph 2, Page 262).

Minkiewicz et al. teaches metric data being structured as branches and leaves (tree). Further the use of a tree data structure is old and well known in the art as a means representing interrelated data and other information in a straightforward manner. Accordingly, it would have been obvious to one skilled in the art at the time of the

invention that the method and system for analyzing and assessing the progress of a project as taught by Paul et al. would benefit from the use of graphs (trees) as a means for structuring complex data so it maybe more readily understood and acted upon in view of the teachings of Minkiewicz et al.

Paul et al. does not expressly teach the updating of at least one database.

Official notice is taken that is well known in the art that database methods and systems act on the data stored within them. More specifically a database system (DBS) or database management system (DBMS) is defined as consisting of a collection of interrelated and persistent data and a set of application programs used to access, update and manage that data (which form the data management system). The goal of a DBS is to provide an environment that is both convenient and efficient to use in retrieving and storing information in the database and provide concurrency control if the system is shared by users.

It would have been obvious to one skilled in the art at the time of the invention that the software metrics knowledge and databases for project management (specifically the software metrics database) taught by Paul et al. would by definition manipulate the plurality of data it encompasses as part of the overall method and system for analyzing and assessing the progress of a project thereby providing a convenient and efficient means for storing and retrieving information in the database.

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Regarding Claims 6 and 25 Paul et al. teaches the collection and analysis of requirements traceability and stability metrics (Column 2, Paragraph 5, Page 256).

Paul et al. does not teach the modeling of a software requirements document having the structure of a tree (branches and leaves).

Official notice is taken that it is old and well known in the art to represent documents and other project components utilizing a basic tree structure wherein nodes (leaves and branches) represent the structure and content of the document or component. Well known standards for structure document representation include, but are not limited to: Standardized Generalized Markup Language (SGML), eXtensible Markup Language (XML) and Microsoft's Document Object Model (DOM). The purpose of these standards is to provide an agreed upon and structured format for representing the structure and content of a document.

Further it is well known in the art that collecting and analyzing the lifecycle (history) of project components, including requirements and other documents, through the use of metrics (number of documents, number of revisions per document/section, number of revisions per person, per time interval and the like) provides essential information regarding the current status and progress of the component being analyzed.

It would have been obvious to one skilled in the art at the time of the invention that the method and system for analyzing and assessing the progress of a project as taught by Paul et al. would have benefited from the additional insight provided by the inclusion of project progress metrics relating to the project's requirements document. Further the use of a the structured and standardized document models would have benefited the method and system for analyzing and assessing the progress of a project, as taught by Paul et al., by providing a structured means for collecting and analyzing project progress parameters associated with the requirements document. The additional project progress metrics thereby adding depth and accuracy to the analysis in the form of providing additional project progress metrics and data. The resultant analysis and assessment providing a more accurate and complete understanding of the progress of a project therefore assisting project managers with the critical management decisions regarding risk and quality during the life cycle of a project (Section 3 – Conclusion, Page 263).

Regarding Claims 7, 15 and 26 Paul et al. does not teach outputting the data records to graphically represent the progress of a project.

Minkiewicz et al. teaches the display of the project progress metrics and analysis such display providing the well-known benefit of ease of use (Figures 20-23).

It would have been obvious to one skilled in the art at the time of the invention that the method and system for analyzing and assessing the progress of a project, as taught by Paul et al., would have benefited from ease of use afforded to the end user by the graphically representation of project progress metrics in view of the teachings of Minkiewicz et al.

Regarding Claims 8, 19 and 27 Paul et al. teaches a plurality of documents and project components for which project progress parameters are to be collected and analyzed. More specifically Paul et al. teaches the use of requirements and specifications the importance of the collection and analysis of metrics associated with those documents which Paul et al. refers to as requirements traceability and requirement stability metrics (Column 2, Paragraph 5, Page 256)

Regarding Claim 9 Paul et al. teaches a method and system for analyzing and assessing the progress of a project as discussed above. Further Paul et al. in view of Minkiewicz et al. teaches the collection of a plurality of metrics and there associated data (data records) wherein the data is structured as trees (branches and leaves) as discussed above.

Paul et al. does not teach the parsing of data during the production of data records.

Official notice is taken that it is old and well known in the art to represent data using tree data structures for expressing/storing that data in a standardized and structured format as discussed above. Further it is a well known a perquisite that representing and using data in structured formats, such as the DOM (tree), requires the ability to transform data into and out of (parsing) the chosen data representation before such a representation would be of any practical use.

It would have been obvious to one skilled in the art at the time of the invention that the method and system for analyzing and assessing the progress of a project, as taught by Paul et al. and in view of the teachings o Minkiewicz et al., would have benefited the use of a the structured and standardized data structures as a means for transforming data; providing a structured means for collecting and analyzing project progress metrics.

Regarding Claim 12 Paul et al. teaches the use of regression analysis as a means for assessing and analyzing project progress and trends (Paragraph 1, Page 260). Paul et al. further teaches a method and system for assessing and analyzing the progress of a project wherein attention is paid to the resources to be allocated, having been allocated or available for a project are considered over time (Paragraph 4, Page 256; Paragraph 2, Page 260; Conclusion, Page 263).

Paul et al. is silent on the frequency of the project progress assessments and forecasts.

Official notice is taken that the frequency of assessing and analyzing the progress of a project is arbitrary and based on the individual preferences, legal/contractual project requirements, experiences, project size, scope and duration or any of a plurality other guidelines or schedules. Each assessment and analysis providing the user with an opportunity to make decisions related to the management of the project's progress, including the balancing of available and utilized resources.

It would have been obvious to one skilled in the art at the time of the invention to utilize the method and system for analyzing and assessing the progress of a project as taught by Paul et al. in any desired frequency including but not limited to the daily project progress assessment and forecast, in view of the teachings of official notice, wherein the daily analysis and assessment would providing insight (forecasts) into a project progress and offer an opportunity to effect any of a plurality project progress parameters including the rebalancing of project resources on a daily basis thereby providing the user with an opportunity to make decisions and positively effect progress of a project.

Regarding Claim 13 Paul et al. teaches the essentially temporal nature of the system and method for analyzing and assessing the progress of a project. More

specifically Paul et al. teaches periodic queries (assessments) can provide timely and accurate information leading to good management decisions. Further Paul et al. teaches the dominant dimension of metrics data as being a temporal one (Section 1.1 – Simple Queries on Software Metrics, Page 255).

Regarding Claim 14 Paul et al. teaches a plurality of techniques, including regression analysis, to identify the correlation among a plurality of metrics thereby determining their interdependencies as discussed above.

Regarding Claim 18, claim 18 recites similar limitations to Claim 1 and is therefore rejected using the same art and rationale as applied in the rejections of Claims 1.

7. Claims 5, 10, 11, 16,17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul et al., Software Metrics Knowledge and Databases for Project Management (January 1999) in view of Lawler et al., U.S. Patent 5,930,798.

Regarding Claims 5, 10, 11 and 24 Paul et al. teaches the use of a database to collect, store, read, write and analyze project progress parameters as discussed above.

Paul et al. is silent on the architecture of the system and method disclosed and does not expressly teach receiving data across a network.

Lawyer et al. teaches a network based method and system for analyzing and assessing the progress of a project; the network providing the ability to exchange data between different software applications and provide a consistent metric framework (Abstract). Further it is well known in the art that database systems are commonly built and deployed utilizing client/server or multi-tier architectures. The architecture of such systems being optimized for the sharing of resources and data across distributed systems/networks.

It would have been obvious to one skilled in the art at the time of the invention that the method and system for analyzing and assessing the progress of a project as taught by Paul et al. would have benefited from the distributed system/network as taught by Lawyer et al. and gained the ability to exchange data between different software applications and provide a consistent metric framework (Abstract).

Regarding Claim 16 Paul et al. is silent on the structure of the metric data stored, assessed or analyzed.

Lawler et al. teaches a method and system for assessing and analyzing the progress of a project wherein the project's metrics (data records) are modeled as a set of measurement objects (Figure 11) wherein the use of the measurement object models allows for a consistent and repeatable measurement model (Abstract).

It would have been obvious to one skilled in the art at the time of the invention to model the data records (metrics) of the method and system for assessing and analyzing the progress of a project as taught by Paul et al. as objects in order to reap the benefit of creating a more consistent and repeatable means for manipulating and sharing metrics in view of the teachings of Lawler et al.

Regarding Claim 17 Paul et al. is silent on the project's format.

Lawler et al. teaches a method and system for assessing and analyzing the progress of a project wherein method and system is modeled using object-oriented format (Figures 1-17; Column 5, Lines 35-44). Further it is common for projects to utilize object-oriented languages, models, tools and techniques. Accordingly it would have been obvious to one skilled in the art at the time of the invention to express and manage the project as taught by Paul et al. utilizing object-oriented techniques, tools and languages as taught by Lawler et al.

Official notice is taken that the use of content markup languages, XML for example, as a means of transmitting (exchanging) a wide variety of data on the distributed systems and elsewhere is well known in the art at the time of the invention. It is obvious the method for assessing and analyzing the progress of a project as taught by Paul et al. and further in view of the teachings of Lawler et al. (distributed network) would benefit from the simple and very flexible text format content markup languages

offer. Accordingly, it would have been obvious to one in the art at the time of the invention that the system and method for analyzing and assessing the progress of a project, as taught by Paul et al., would have benefited from the incorporation/use of content markup languages as a means of transmitting (exchanging) data over a distributed network and providing a standardized means for sharing of resources and data in view of the teachings of Minkiewicz et al.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Carrier et al., U.S. Patent 5,960,196, teaches a software release metric reporting system and method wherein metrics are gathered from a software release control system which utilizes a version control subsystem to manage numerous versions of software modules or files developed.
- Miller, U.S. Patent 6,101,481, teaches managing a software project using task management wherein relevant tasks within a project decomposed into a work breakdown structure (tree).
- Parrish et al., U.S. Patent 5,553,282, teaches a distributed project history method and system wherein information concerning document (code, requirements document, and the like) versions are tracked in a historical database.

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- Iwamoto et al., U.S. Patent 4,912,669, teaches a document editing system wherein the document has a basic tree structure wherein nodes (branches and leaves) represent the content and structure of the document.

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- Florac et al., Measuring the Software Process: Statistical Process Control for Software Process Improvement, teaches the use of statistical process control (SPC) techniques can be used to manage and improve the software process. Florac et al. further teaches SPC related to project status and stability.
- Weller, Using Metrics to Manage Software Projects, teaches the use of software metrics (including several metrics related to software requirement documents) in determining possible outcomes, which reflect that status of the project.
- Daskalantonakis, A Practical View of Software Measurement and Implementation Experiences with Motorola, teaches the use of software metrics is greatly facilitated by a software configuration management system due to its ability to collect software metrics for analysis. Daskalantonakis further teaches the use of earned value and requirements tracking metrics.
- Bohem et al., Software Cost Estimation with COCOMO II, teaches an objective cost and schedule model for planning and executing software projects. Bohem further teaches the use of cost factors to model key process areas for a project including requirements management cost factors.
- Nogueira et al., A Formal Risk Assesment Model for Software Evolution, teaches a formal method to asses the risk and duration of software projects that

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includes tracing the evolution of requirements wherein the following metrics birth rate,

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death rate and change rate are used to measure the requirements volatility.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Scott L. Jarrett whose telephone number is (703) 305-

0587. The examiner can normally be reached on 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hafiz Tariq can be reached on (703) 305-9643. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

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SUSANNA M. DIAZ
SUBANNA M. DIAZ
SUBANNA M. DIAZ
SUBANNA M. DIAZ

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